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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,016	04/20/2001	Yukihiro Kiuchi	NE+99P237A	9360
466	7590	09/14/2004	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			SELLERS, ROBERT E	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/830,016	Applicant(s) KIUCHI ET AL.	
	Examiner Robert Sellers	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-38 and 44-47 is/are pending in the application.
- 4a) Of the above claim(s) 26-33, 38, 44 and 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-37, 45 and 46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/10/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

This is responsive to the Request for Continued Examination and the amendment filed June 24, 2004.

1. Claims 26-33, 38, 44 and 47 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction requirement in the reply filed on July 29, 2003.
2. The 35 U.S.C. 103(a) rejection over Takami et al. Patent No. 6,054,222 in view of Shimizu et al. Patent No. 5,854,316 is rescinded due to the amendment of independent claim 34 to an epoxy resin mixture of the tetraphenylethane epoxy resin of formula (3) with a phenol-biphenyl aralkyl epoxy resin of formula (2). Takami et al. shows a biphenyl epoxy resin which was formerly within the ambit of the "epoxy resin containing a biphenyl derivative having no epoxy group" along with an epoxidized tetrakis-(hydroxyphenyl)alkane.
3. Tokunaga et al. Patent No. 5,798(?),400 shows a blend of biphenyl epoxy resins (col. 7, lines 61-62, epoxy resin II and Examples 14 and 15) which are relevant to withdrawn claims 30-33.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 34-37, 45 and 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The phrase "consisting substantially of" used to define the tetraphenylene epoxy resin in claim 34 (as well as withdrawn claim 26) does not clearly indicate the actual content of the epoxy resin of formula (3) within the tetraphenylene epoxy resin since the parameters of the term "substantially" are not denoted. The phrase "consisting essentially of" is a legally recognized term excluding components which materially affect the basic and novel characteristics of the claimed composition.

5. The species of fillers set forth as "selected from fillers made of fused silica, crystalline silica or silicon nitride" in claim 34 (as well as withdrawn claims 26 and 30) relies upon improper Markush language. More favorable consideration would be given to fillers "selected from the group consisting of fused silica, crystalline silica and silicon nitride."

6. The term "type" used to characterize the tetraphenylene epoxy resin of formula (3) in withdrawn claim 29 renders unclear what other species of tetraphenylene epoxy resin, its derivatives or modifications thereof are encompassed thereby.

The text of section 103(a) of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 34-37, 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osada et al. Patent No. 6,160,078 and Japanese Patent No. 9-268219 (Japanese '219) in view of Japanese Patent Nos. 57-38814 and 58-150581 (Japanese '814 and '581, respectively).

7. Osada et al. (col. 1, line 60 to col. 2, line 44; col. 7, lines 37-38, 44-48 and 63-66) and Japanese '219 (translation, page 2, paragraph 6 to page 3, paragraph 10; page 7, paragraphs 38 and 39) disclose compositions comprising a phenol-biphenyl aralkyl epoxy resin conforming to claimed formula (2), a phenol-biphenyl aralkyl phenolic resin within the confines of formula (10) in a molar ratio of phenolic hydroxyl groups:epoxy groups of from 0.5:1 to 1.5:1 (Osada et al., col. 7, lines 29-33), an accelerator and silica utilized in amounts within the claimed proportion range. Osada et al. recognizes the advantage of attaining flame retardance without the addition of halogen compounds and antimony trioxide in column 1, lines 37-46 as claimed.

8. The mixture of the phenol-biphenyl aralkyl epoxy resin with the claimed tetraphenylethane epoxy resin of formula (3) is not recited. Both Osada et al. (col. 4, lines 9-11) and Japanese '219 (page 6, paragraphs 33 and 34) are open to the blending of their phenol-biphenyl aralkyl epoxy resin with another epoxy resin.

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9. Japanese '814 and '518 teach a tetraphenylethane epoxy resin of claimed formula (3) having "improved thermal properties such as heat distortion temperature and mechanical properties (Japanese '581, second abstract, USE section)."

10. It would have been obvious to employ the tetraphenylethane epoxy resin as the other epoxy resin to be blended with the phenol-biphenyl aralkyl epoxy resin of Osada et al. and Japanese '219 in order to enhance the heat distortion temperature (Japanese '814 abstract, lines 18-19).

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Japanese Patent No. 9-3161 is directed to a formulation containing a phenol-biphenyl aralkyl epoxy resin with a phenolaralkyl phenolic resin without the claimed biphenyl moieties as depicted in claimed formula (10).

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Robert Sellers  
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Art Unit 1712